

## **REMARKS**

Claims 1-46 are pending in the application. The claims have been amended as indicated in the listing of claims. Claims 6-7 and 31-33 have been canceled.

### **Claim Objections**

Regarding claim 2, the amendment made in the previously-filed paper removed a redundancy of the word “the” in the claim.

Regarding claim 14, the amendment made in the previously-filed paper removed the word “bladder” in the claim.

Claim 11 has been amended, and is now believed to be in condition for allowance.

Claims 13 and 18 have been amended, and are now believed to be in condition for allowance.

Claim 17 has been amended, and is now believed to be in condition for allowance.

Claim 20 has been amended, and is now believed to be in condition for allowance.

Claim 22 has been amended, and is now believed to be in condition for allowance.

Claim 27 has been amended, such that claims 27 and 34-38 are now believed to be in condition for allowance.

### **CLAIM REJECTIONS UNDER 35 U.S.C. § 101**

Claims 1-19 and 24-43 stand rejected as directed to non-statutory subject matter. The Applicants’ attorney respectfully submits that the rejected claims, other than claims 2 and 25, which specify types of anatomy and fluid analyzed, are all directed to at least a transducer/computer combination and the functionality and features of same. The Applicants’ attorney respectfully requests that the Examiner clarify the basis of the rejection, particularly as


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to how the rejected claims recite anatomical structures in such a way as to be “part of the invention.”

**CLAIM REJECTIONS UNDER 35 U.S.C. § 112, FIRST PARAGRAPH**

Claims 6-7 and 31-33 have been canceled from the application.

**CLAIM REJECTIONS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH**

Claims 11 and 17 have been amended, such that they are now believed to be in condition for allowance.

**CLAIM REJECTIONS UNDER 35 U.S.C. § 103(A)**

**Claim 1**

Claim 1 recites a computer in signal communication with an at least one transducer assembly, the computer having executable signal processing software with programmed instructions to determine at least one harmonic energy level value associated with the echoes and to calculate a fluid volume contained in the cavity based upon the at least one harmonic energy level value associated with an echo having passed through the fluid.

As explained in a previously filed paper, in no manner does Ganguly teach or suggest determining at least one harmonic energy level value associated with echoes from a cavity and calculating a fluid volume contained in the cavity based upon the at least one harmonic energy level value associated with an echo having passed through the fluid as is required by claim 1.

Bradley fails to teach or suggest determining a fluid volume, much less determining a fluid volume based on determined harmonic-energy values. As such, Bradley fails to supply the teachings missing from Ganguly, namely determining at least one harmonic energy level value

associated with echoes from a cavity and calculating a fluid volume contained in the cavity based upon the at least one harmonic energy level value associated with an echo having passed through the fluid.

The Applicants disclose and claim a specific manner in which the harmonic energy is used to determine a fluid volume. As discussed in an earlier paper, and as it pertains to Applicants' invention, because harmonic generation is different in tissue than in fluids, only the volume of urine that has been crossed by the acoustic beam would generate differential harmonic energy. In contrast, when the bladder is empty or below a certain volume level, no harmonic distortion occurs, whereas maximal distortion will be obtained for a full volume. The cited references do not teach or suggest that these principles could be employed in the manner claimed. The references, taken either each alone or in combination, simply fail to teach or suggest an approach in which harmonic energy differentials are, or even could be, used to determine a fluid volume. The Applicants' attorney respectfully disagrees with what appears to be the Examiner's position that Applicants' claimed approach is taught or suggested by simply combining the bare concept of harmonic imaging in general with Ganguly's approach of analyzing the geometry of a bladder to obtain a urine-volume estimate.

**Claims 20, 24 and 44**

Claims 20, 24 and 44 are patentable for reasons at least similar to those discussed above with regard to claim 1.

**Claims 2-19, 21-23 and 25-43**

Claims 2-19, 21-23 and 25-43 are patentable by virtue of at least their respective dependencies from claims 1, 20 and 24. Chalana fails to supply the teachings missing from Ganguly and Bradley, namely determining at least one harmonic energy level value associated with the echoes and calculating a fluid volume contained in the cavity based upon the at least one



harmonic energy level value associated with an echo having passed through the fluid. Accordingly, claim 16 is patentable for reasons discussed above.

**Claim 45**

Claim 45 recites determining boundary information of a cavity from harmonic signals in terms of depth, height, and correction factor, K, and calculating at least one of the volume of the cavity from the boundary information and the fluid volume in the body cavity as a product of depth, height, and correction factor K. Ganguly, Bradley and Chalana do not teach or suggest, and the Examiner fails to allege or point out how Ganguly, Bradley or Chalana teaches or suggests, the use of a correction factor as recited in claim 45.

**Claim 46**

Claim 46 is patentable by virtue of at least its dependency from claim 45.



## CONCLUSION

Applicants assert that pending claims 1-46 are novel, non-obvious, fully enabled and accordingly in condition for allowance. A Notice of Allowance is therefore earnestly solicited.

If the Examiner has any questions, the Examiner is invited to contact the Applicant's attorney listed below.

Respectfully submitted,

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